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COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Blue Ridge Regional Office
www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

Robert J. Weld
Regional Director

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7705 Timberlake Road
Lynchburg, Virginia 24502
(434) 582-5120
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Roanoke Office
3019 Peters Creek Road
Roanoke, Virginia 24019
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July 2, 2012

Wm Byron Penland
Lt. Colonel, U.S. Army
Radford Army Ammunition Plant
Route 114, P. O. Box 1
Radford, VA 24143-0100

Kent Holiday
Vice President/General Manager
Alliant Techsystems Inc.
Route 114, P. O. Box 1
Radford, VA 24143-0100

Location: Montgomery County
Registration No.: 21258
County-Plant ID No.: 121-00082

Dear Messrs. Penland and Holiday:

Attached is a permit to modify and operate a commercial multibase propellant line in accordance with the provisions of the Virginia State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. This permit contains legally enforceable conditions. Failure to comply may result in a Notice of Violation and/or civil charges. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on November 15, 2011.

This permit approval to construct and operate shall not relieve the owner of the responsibility to comply with all other local, state, and federal permit regulations.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within 30 days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 provides that you may request direct consideration of the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have 30 days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact Patrick Corbett at (434)582-6230.

Sincerely,

for Robert J. Weld
Regional Director

Attachments: Permit

cc: Director, OAPP (electronic file submission)
Manager, Data Analysis (electronic file submission)
Manager/Inspector, DEQ Air Compliance

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STATIONARY SOURCE PERMIT TO CONSTRUCT AND OPERATE

This permit supersedes your permit dated November 6, 1996 as amended January 27, 1997.

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

New River Energetics
P. O. Box 1
Radford, VA 24141-0100
Registration No. 21258
County-Plant No. 121-0082

is authorized to construct and operate

one commercial multibase propellant line

located at

Route 114 near Radford, Virginia

in accordance with the Conditions of this permit.

Approved on July 2, 2012.

Robert J. Weld
Regional Director

Permit consists of 8 pages.
Permit Conditions 1 to 23.

INTRODUCTION

This permit approval is based on the permit applications dated September 21, 2011 including supplemental information dated October 31, 2011, November 2, 2011, and November 15, 2011; July 31, 1995 including supplemental information dated August 15, 1995, September 11, 15 and 29, 1995, October 5, 6, 12 and 13, 1995, and amendment information dated October 1 and 22, 1996. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action. In addition, this facility may be subject to additional applicable requirements not listed in this permit.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-10-20 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution. The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the DEQ or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§2.2-3700 through 2.2-3714 of the Code of Virginia, §10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

1. Equipment at the facility consists of:

   Modified equipment
   -eight (8) extruders/cutters

   Previously installed equipment
   -twelve (12) mixers

   -five (5) 12" blockers

   -eight (8) primary Sweco water separators

   -eight (8) 500 gallon slurry transfer tanks

   -seven (7) 500 gallon ethanol/water storage tanks

   -one (1) 600 gallon ethanol/water storage tank

   -one (1) 500 gallon ethanol/carbon black storage tank

   -five (5) secondary Sweco water separators

-four (4) slurry coaters

-four (4) partial condensers

-one (1) solvent recovery system, consisting of two distillation columns and two condensers

-four (4) centrifuges

-three (3) steam-heated continuous (fluidized bed) dryers

-three (3) shaker screeners

-one (1) homogenizer/blender

-various storage buildings and processing areas, including one (1) nitrocellulose and premix storage building, four (4) sublot storage buildings, two (2) in-process storage buildings, two (2) final mix storage buildings, sublot can packing, ballistics lab, final blending, container preparation, final can packing, automated 1# packing line, 4#, 5# and 8# packing line, four (4) shipping houses

-one (1) ethanol/water storage tank with a maximum capacity of 16,500 gallons (subject to NSPS Subpart Kb recordkeeping)

-two (2) ethanol/water storage tanks, each with a maximum capacity of 12,430 gallons (subject to NSPS Subpart Kb recordkeeping)

-one (1) ethanol storage tank with a maximum capacity of 20,000 gallons (subject to NSPS Subpart Kb recordkeeping)

2. The permittee is authorized to store ethanol or ethanol/water mixtures in the storage tanks. A change in the materials stored may require a permit to modify and operate.
(9 VAC 5-80-1180)

3. Particulate emissions from each shaker screener shall be controlled by a cyclone scrubber. Each cyclone scrubber shall be provided with adequate access for inspection. An electronic interlock system shall prevent operation of each shaker screener unless water is being supplied to the corresponding cyclone scrubber.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

4. VOC Work Practice Standards – At all times the disposal of volatile organic compounds shall be accomplished by taking measures, to the extent practicable, consistent with air pollution control practices for minimizing emissions. Volatile organic compounds shall not be intentionally spilled, discarded in sewers which are not connected to a treatment plant, or stored in open containers, or handled in any other manner that would result in evaporation beyond that consistent with air pollution practices for minimizing emissions.
(9 VAC 5-80-1180, 9 VAC 5-50-20 F, and 9 VAC 5-50-260)

5. Volatile organic compound (VOC) emissions from slurry transport of extruded propellant and solvent laden water from the process shall be minimized by use of solvent recovery and biological treatment in a wastewater treatment plant. The solvent recovery system shall be provided with adequate access for inspection. The condensers shall be maintained by the permittee such that they are in proper working order at all times.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

6. The permitted facility shall be constructed so as to allow for emissions testing and monitoring upon reasonable notice at any time, using appropriate methods. Test ports shall be provided at the appropriate locations.
(9 VAC 5-80-1180 and 9 VAC 5-50-30 F)

7. The annual production of dry multibase propellant shall not exceed 8,000,000 pounds per year, calculated as the sum of each consecutive 12 month period. The annual production of dry flash suppressant (a subset of dry multibase propellant) shall not exceed 37,500 pounds per year, calculated as the sum of each consecutive 12 month period.
(9 VAC 5-80-1180)

8. VOC emissions shall be calculated by mass balance, as follows:

   VOC emissions = (VOC entering with premix) plus (VOC entering with nitrocellulose (NC)) plus (VOC added during processing) plus (VOC emissions to air from wastewater) minus (VOC to wastewater) minus (recovered VOC sold to RAAP) minus (VOC from solvent recovery system for this line) minus (VOC leaving in scrap) minus (VOC in finished product)

   Hourly emissions shall be calculated monthly using the VOC emissions and the actual hours of operation for the propellant line over the preceding 12-month period.
   (9 VAC 5-80-1180)

9. Initial performance tests shall be conducted for volatile organic compounds (VOC) from the multibase propellant line to determine compliance with the emission limits contained in Condition 10. The tests shall determine the value of each parameter given in the formula in Condition 8. The tests shall be performed, and demonstrate compliance, within 180 days after permit issuance. The details of the tests are to be arranged with the Blue Ridge Regional Office. The permittee shall submit a test protocol no later than 60 days after permit issuance. The test results shall be submitted to the Blue Ridge Regional Office within 45 days after test completion and shall conform to the test report format enclosed with this permit.
(9 VAC 5-50-30 and 9 VAC 5-80-1180)

10. Emissions from the operation of the multibase propellant line shall not exceed the limits specified below:

Total Suspended Particulate	2.1 lbs/hr	7.4 tons/yr
PM-10	2.1 lbs/hr	7.4 tons/yr

Volatile Organic Compounds	17.0 lbs/hr	59.4 tons/yr

VOC emissions shall be calculated in accordance with Condition 8.
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

11. Visible emissions from the shaker screeners, homogenizer/blender, final blending, and packing shall not exceed five (5) percent opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A).
(9 VAC 5-80-1180 and 9 VAC 5-50-260)

12. The permittee shall maintain records of all emission data and operating parameters necessary to demonstrate compliance with this permit. The content of and format of such records shall be arranged with the Blue Ridge Regional Office. These records shall include, but are not limited to:

    a. Annual production of dry multibase propellant, calculated as the sum of each consecutive 12 month period.

    b. Annual VOC emissions, calculated in accordance with Condition 8 as the sum of each consecutive 12 month period.

    c. Hourly VOC emissions, calculated in accordance with Condition 8.

    d. Results of all tests for VOC content in production materials.

    e. Daily records of the VOC added during processing, VOC in the premix and NC added to the process, VOC/solvent recovered, VOC in wastewater leaving the site.

    f. Monthly records of the amount of conveyance ethanol emitted for each pound of flash suppressant produced.

    g. The permittee shall keep readily accessible records showing the dimensions of the storage vessels and an analysis showing the capacity of the storage vessels. These records shall be kept for the life of the storage vessels.

    These records shall be available for inspection by the DEQ and shall be current for the most recent five (5) years.
    (9 VAC 5-80-1180 and 9 VAC 5-50-50)

13. **Emissions Testing** - The emission units shall be constructed so as to allow for emissions testing upon reasonable notice at any time, using appropriate methods. Sampling ports shall be provided when requested and safe sampling platforms and access shall be provided.
(9 VAC 5-50-30 F and 9 VAC 5-80-1180)

NOTIFICATIONS

14. **Initial Notifications** - The permittee shall furnish written notification to the Blue Ridge Regional Office of:

    a. The actual date on which modification of the propellant line commenced within 30 days after such date.

    b. The actual start-up date of the modified propellant line within 15 days after such date.

    c. The actual start date of material tests required in Condition 9 no later than 30 days prior to such date.

    (9 VAC 5-50-50 and 9 VAC 5-80-1180)

GENERAL CONDITIONS

15. **Permit Invalidation** - The portions of this permit to modify the propellant line shall become invalid, unless an extension is granted by the DEQ, if:

    a. A program of continuous construction, reconstruction, or modification is not commenced within the latest of the following:

        i. 18 months from the date of this permit;
        ii. Nine months from the date that the last permit or other authorization was issued from any other governmental entity;
        iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or

    b. A program of construction, reconstruction, or modification is discontinued for a period of 18 months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

    (9 VAC 5-80-1210)

16. **Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:

    a. Knowingly makes material misstatements in the permit application or any amendments to it;

    b. Fails to comply with the conditions of this permit;

    c. Fails to comply with any emission standards applicable to a permitted emissions unit;

    d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or

e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

(9 VAC 5-80-1210 F)

17. **Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:

a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;

b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and

d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

18. **Maintenance/Operating Procedures** - At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment and process equipment which affect such emissions:

a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.

b. Maintain an inventory of spare parts.

c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.

d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee

shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

19. **Record of Malfunctions** - The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause), corrective action, preventive measures taken and name of person generating the record.
(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

20. **Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Blue Ridge Regional Office of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile transmission, telephone or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Blue Ridge Regional Office.
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

21. **Violation of Ambient Air Quality Standard** - The permittee shall, upon request of the DEQ, reduce the level of operation or shut down a facility, as necessary to avoid violating any primary ambient air quality standard and shall not return to normal operation until such time as the ambient air quality standard will not be violated.
(9 VAC 5-20-180 I and 9 VAC 5-80-1180)

22. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Blue Ridge Regional Office of the change of ownership within 30 days of the transfer.
(9 VAC 5-80-1240)

23. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.
(9 VAC 5-80-1180)

SOURCE TESTING REPORT FORMAT

Report Cover

1. Plant name and location
2. Units tested at source (indicate Ref. No. used by source in permit or registration)
3. Test Dates.
4. Tester; name, address and report date

Certification

1. Signed by team leader/certified observer (include certification date)
2. Signed by responsible company official
3. *Signed by reviewer

Copy of approved test protocol

Summary

1. Reason for testing
2. Test dates
3. Identification of unit tested & the maximum rated capacity
4. *For each emission unit, a table showing:
    a. Operating rate
    b. Test Methods
    c. Pollutants tested
    d. Test results for each run and the run average
    e. Pollutant standard or limit
5. Summarized process and control equipment data for each run and the average, as required by the test protocol
6. A statement that test was conducted in accordance with the test protocol or identification & discussion of deviations, including the likely impact on results
7. Any other important information

Source Operation

1. Description of process and control devices
2. Process and control equipment flow diagram
3. Sampling port location and dimensioned cross section Attached protocol includes: sketch of stack (elevation view) showing sampling port locations, upstream and downstream flow disturbances and their distances from ports; and a sketch of stack (plan view) showing sampling ports, ducts entering the stack and stack diameter or dimensions

Test Results

1. Detailed test results for each run
2. *Sample calculations
3. *Description of collected samples, to include audits when applicable

Appendix

1. *Raw production data
2. *Raw field data
3. *Laboratory reports
4. *Chain of custody records for lab samples
5. *Calibration procedures and results
6. Project participants and titles
7. Observers' names (industry and agency)
8. Related correspondence
9. Standard procedures

* Not applicable to visible emission evaluations